

Table 38

Selected Remedy Cost Estimate Summary

Description	QTY	UNIT	Unit Cost	Total	Notes
Sludge Excavation Off-site disposal				Unknown	Unknown volume of sludge may be present at C&P
VOC Soils					Based on FS, minus LRC costs
Design Engineer	240	\$/hr	75	18,000	
Draftsman	60	\$/hr	45	2,700	
Printing	1	ls	500	500	
Labor Engineer	40	\$/hr	75	3,000	
Demo Subcontractor	1	ls	8000	8,000	
Move Parts Cleaner	1	ls	19680	19,680	
Materials	1	ls	4259	4,259	
Labor Engineer	80	\$/hr	75	6,000	
Technician/equipment op.	80	\$/hr	40	3,200	
Laborer	80	\$/hr	24	1,920	
Concrete cutter	200	\$/ft	3.5	700	
Mobilization	100	\$/mile	2.5	250	
Excavator	80	\$/hr	75	6,000	
Dump Truck	80	\$/hr	40	3,200	
Pickup Truck	80	\$/hr	5	400	
Vac Trailer	40	\$/hr	10	400	
Compactor	3	\$/day	100	300	
Backfill (clean)	300	\$/yd ³	4.5	1,350	Used ½ FS cost since Cinder Pile will not require excavation of soil
Transfer Pit Engineer	8	\$/hr	75	600	
Technical/equipment op.	12	\$/hr	40	480	
Laborer	12	\$/hr	24	288	
Excavator	12	\$/hr	75	900	
Dump truck	12	\$/hr	45	540	
Pickup truck	12	\$/hr	5	60	
Remove & Spread Treated Soil					FS cost minus shipping and disposal fee, since treated soil does not require incineration
Engineer	24	\$/hr	75	1,800	
Technician	40	\$/hr	40	1,600	
Laborer	40	\$/hr	24	960	
Loader	40	\$/hr	30	1,200	FS cost, but well installation cost cut in ½ and well completion and development cost omitted because air sparging not used
Well Installation Engineer	30	\$/hr	75	2,250	
Technician	20	\$/hr	40	800	
Pickup Truck	30	\$/hr	5	150	
Driller	40	\$/hr	175	7,000	
Electrician	20	\$/hr	40	800	
SVE Construction Eng	24	\$/hr	75	1,800	
Technician	60	\$/hr	40	2,400	
Laborer	60	\$/hr	24	1,440	
Electrical supplies	6	ls	2000	12,000	
Pickup truck	60	\$/hr	5	300	Used FS, but reduced number of well caps, since air sparging not
SVE Wells 4" well points	5	\$/each	9.5	48	

Table 38 (Continued)

Selected Remedy Cost Estimate Summary

4"X10' screens	5	\$/each	57	285	used.
4"X10' casing	5	\$/each	31	155	
Bentonite chips (50# bags)	60	\$/each	4.75	285	
10/20 sand (100# bags)	50	\$/each	8	400	
Concrete (redimix bags)	20	\$/bag	8	160	
Flush-Mount Well Covers	5	\$/each	52	260	
Misc. Materials					
4" PVC Pipe	200	\$/ft	0.94	188	
4" PVC elbows	15	\$/each	2.32	35	
Misc. fittings	1	\$/each	600	600	
Activated carbon	2000	\$/lb	1.5	3,000	
Total Capital Cost				\$122,643	
Monitoring Engineer	240	\$/hr	75	18,000	
Technician	500	\$/hr	40	20,000	
Blower (replacement)	0.25	\$/each	3,000	750	
PID	0.25	\$/each	2,500	625	
Pitot tube	0.25	\$/each	300	75	
Truck	500	\$/hr	5	2,500	
Misc. parts	1	ls	500	500	
Total Annual O&M Cost				\$42,450	
Petroleum Contaminated Subsurface Soils				See free-product recovery costs	These costs are included in the cost of Free-product Recovery
Bioventing costs are included in the cost of Free-product Recovery					
Petroleum Contaminated Surface Soils				Unknown	TPH in surface soils was not analyzed as part of the RI. Unknown area and volume of soil that poses an unacceptable risk may be present in LRY and at C&P
Lead Contaminated Soils				Unknown	Unknown volume of lead contaminated soil may be present at C&P
PAH Contaminated Surface Soils				Unknown	Although the BRA identified that PAH surface soils pose an unacceptable risk, the FS and proposed plan did not address it. Unknown volume of soil requires removal;

Table 38 (Continued)

Selected Remedy Cost Estimate Summary

					possibly limited to hot spot removal.
Asbestos Contaminated Soil & Debris					Costs are based on 24" cap
	200	\$/hr	75	15,000	
Engineer	5	\$/acre	100	500	
Recontour	11,710	\$/yd ³	4.50	52,700	
18" clean fill (hauling, applying)	3904	\$/yd ³	2.50	9,800	
6" top soil	3904	\$/yd ³	8	31,232	
Provide Soil (load, Hauling, etc.)	1	ls	4,835	4,835	
Revegetation					
Total Capital Cost				\$114,067	
Annual Mowing	1	ls	2,000	2,000	Cost estimated on mowing 1/month for 6 months; annual inspection
Inspection Engineer	8	\$/hr	75	600	
Total O&M Costs				2600	
Basement Gas					
Technician	25	\$/hr	40	1,000	Assumes sampling of 6 homes, plus ambient air sample and duplicate; additional followup sampling included; also assumes 6 mitigation systems installed
Analyses	8	\$/each	350	2,800	
Followup Sampling					
Technician	100	\$/hr	40	4,000	
Analyses	32	\$/each	350	11,200	
Mitigation Systems	6	ls	5000	30,000	
Total Capital Costs				\$49,000	
VOC Contaminated Groundwater					
ICs	1	ls	66,000	66,000	IC costs based on FS and assumes one-time lump sum for provision of alternate water
Total Capital Costs				\$66,000	
Monitoring Cost Included in Monitoring Cost				See Monitoring Cost	Monitoring Cost Included in Monitoring Cost portion of table

Table 38 (Continued)

Selected Remedy Cost Estimate Summary

Free-Product Recovery					Costs not available for hydrophobic filter pac
Well Drilling					
Engineer	220	\$/hr	75	16,500	
Technician	490	\$/hr	40	19,600	
MRL Spotter	440	\$/hr	30	13,200	
Subcontractor Driller	1800	\$/foot	40	72,000	
Mobilization	1	ls	8500	8,500	
Perdiem	45	\$/day	250	11,250	
Pickup Truck	440	\$/hr	5	2,200	
6" Casing	120	\$/10 ft	93	11,160	
6" Screen	60	\$/10 ft	235	14,100	
6" Well Cap	55	\$/each	16	880	
Bottom Cap	60	\$/each	28	1,680	
Bentonite Plug	600	\$/50#bag	4.65	2,790	
Silica Sand	450	\$/50#bag	5.50	2,475	
Hydrophobic Filter Pac	60	\$/10 ft			
18" Manholes	45	\$/each	112	5,040	
Locks	60	\$/each	7	420	
Concrete (2 bags/well)	120	\$/60#bag	2.85	342	
Well Develop/Construct Recovery Systems					
Engineer	80	\$/hr	75	6,000	
Technician	600	\$/hr	40	24,000	
Technician	600	\$/hr	40	24,000	
MRL Spotter	400	\$/hr	30	12,000	
Pickup Truck	400	\$/hr	5	2,000	
Vac Trailer	200	\$/hr	10	2,000	
Submersible Pump	5	\$/each	400	2,000	
Generator	200	\$/hr	3	600	
Product Skimmers	20	\$/pump	1500	30,000	
Product Canisters	5	\$/each	575	2,875	
Belt Skimmers	10	\$/each	3300	33,000	
Compressor	3	\$/each	750	2,250	
Venting Blower	2	\$/each	2200	4,400	
Sheds	5	\$/each	600	3,000	
Product Transport Tank	2	\$/each	300	600	
4-Wheeler	1	\$/each	5000	5,000	
Air Tight Well Cap	5	\$/each	125	625	
Manhole Vaults	15	\$/each	350	5,250	
4" PVC Pipe	1000	\$/foot	1000	1,220	
Pipe Fittings	1	ls	1	500	
Electrical Supplies	1	ls	1	500	
Total Capital Costs				\$343,957	
Monitoring & Reporting					
Engineer – Product Rec	120	\$/hr	75	9,000	
Technical – Product Rec	400	\$/hr	40	16,000	
Pickup Truck	300	\$/hr	5	1,500	
Product/Interface Probe	1	\$/unit	1200	1,200	
Misc. Parts	1	\$/year	1000	1,000	
Engineer – Bioventing	75	\$/hr	75	5,625	
Technician – Bioventing	325	\$/hr	40	13,000	
Misc. Parts	1	\$/year	1000	1,000	
Sampling & Monitoring costs are included in Monitoring; Disposal is estimated on 10,000 gallons of free-product being					

Table 38 (Continued)

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Engineer – Disposal	20	\$/hr	75	1,500	recovered.
Technician – Disposal	100	\$/hr	40	4,000	
Disposal	10000	\$/gallon	0.25	2,500	
Total Annual O&M Costs				\$56,325	
Dissolved Phase Petroleum				\$ 0	Monitoring Costs are included in the monitoring component
Lead Contaminated Groundwater				Unknown	Unknown areal impact of lead contaminated groundwater at LRY and may be present at C&P. The RD will require alternatives analysis.

Table 38 (Continued)

Selected Remedy Cost Estimate Summary

Confirmation Sampling				Unknown	Confirmation sampling data for interim remedial actions will be evaluated. If necessary, additional data will be collected to ensure cleanup levels are met. The number of confirmation samples that will be needed is unknown.
Monitoring VOCs	20 years	ls	33,700	33,700	FS cost for VOC monitoring cost until cleanup levels are achieved
Dissolved Petroleum & MNA (assume for 10 year period)	1	\$/year	9,900	9,900	Dissolved Petroleum and MNA from the proposed plan
Free Product				See O&M costs for Free product recovery	Free Product measurement included in the annual O&M costs for Free product recovery
Private Well Sampling Technician Analyses	40 10	\$/hr \$/each	40 150	1,600 1,500	Assumes 10 wells/yr for 20 years
Total Annual Monitoring Costs				\$46,700	

Capital Costs

Annual O&M Costs (discount factor 7%)

	10 years	20 years
\$122,643	\$ 46,700	\$36,800
\$114,067	\$ 56,325	\$56,325
\$ 49,000	\$ 2,600	\$ 2,600
\$ 66,000	\$ 42,450	\$42,450
\$343,957		

Table 38 (Continued)

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\$695,667

\$148,075

\$138,175

O&M Present Worth = 1,533,361

Capital Costs = 695,667

Total Present Worth = \$2,229,028